LEADING ARTICLE

Protective over-shoes are unnecessary in a Day Surgery Unit

N. C. Weightman and K. R. Banfield*

Departments of Microbiology and *Infection Control, Friarage Hospital, Northallerton, North Yorkshire DL6 1YG, UK

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Summary: The lack of agreement on the use of over-shoes tends to perpetuate the ritual of their use in general operating theatres. However, the limited evidence which supports their use in such settings is not applicable in a Day Surgery Unit where their use is not recommended. In order to reduce overt contamination in the unit theatre, a local protocol should be drawn up specifying the use of designated day unit footwear for those that remain within the unit and for all persons entering the operating theatre.

Introduction

By temporarily covering outdoor footwear when entering an operating theatre, and theatre footwear when leaving, over-shoes are intended to decrease contamination of the environment by potential pathogens and thereby reduce the incidence of infective complications following surgery.

The use of disposable plastic over-shoes in operating theatres is widespread, and in 1988 an estimated £368 000 was spent on them in the UK. Although previous studies have questioned the value of over-shoes, there has been reluctance to stop their use, particularly in theatres where joint surgery is performed, as well as in general surgery. However, we believe over-shoes are not necessary in Day Surgery Units. The function of a Day Surgery Unit is to perform minor clean surgery such as hernia repairs, varicose vein stripping, cone biopsies and laparoscopy as day cases. These units do not usually perform procedures that have previously given rise to concern about the abandonment of over-shoes.

Even for general surgery operating theatres there is evidence that the use of over-shoes does not lead to a decrease in floor colony counts. Humphreys et al. studied floor bacterial counts in a general operating theatre: no significant increase in colony counts was evident when over-shoes were not worn, and indeed there was a significant increase in colony number when over-shoes were worn.

Correspondence to: Dr N. C. Weightman.

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counts when over-shoes were worn. In contrast, a study by Copp et al. examined theatre floors for contamination with and without the use of protective footwear, and found that over-shoes do reduce transfer of bacteria. However, this may have been because the over-shoes actually transferred bacteria away from the study area to other parts of the theatre.

When over-shoes are put on or removed hand contamination may occur. A small study in which the hands of 18 individuals were examined after contact with their over-shoes showed that, without exception, all those involved had organisms on their hands which were likely to have arisen from touching their outdoor footwear. Although this problem can be addressed by providing appropriate handwashing facilities, compliance with hand hygiene protocols following contact with footwear may be low.

If they are to be effective in reducing contamination from outdoor footwear, then over-shoes must remain intact whilst they are worn. When a total of 1387 used single layer over-shoes were collected over a 5-day period in one hospital and filled with water and examined for leakage, only 29% were found to be intact. Similarly, 32 out of 102 had visible evidence of blood soaking through the over-shoe to the inside, bringing into question their impermeability during use.

There is continued support for the use of over-shoes in theatres where prosthetic joint replacement is performed. This has its origins in the work of Charnley and Eftekhar who emphasized the importance of clean air and aseptic techniques in reducing the incidence of infected prosthetic hip joints. Since over-shoes can reduce overt contamination from outdoor footwear, it has been inferred that they may serve the purpose of reducing air contamination in orthopaedic theatres. There is no published data to support this supposition.

Theatre footwear is often visibly contaminated with blood, which may flake off into the environment. To prevent this, it has been suggested that a fresh pair of over-shoes should be put over outdoor footwear on entering the theatre suite instead of using designated theatre footwear. However, these arguments are less relevant for a Day Surgery Unit which performs less bloody surgery.

Protocol for footwear in a Day Surgery Unit with dedicated operating theatre

This review shows that there is little to support the use of over-shoes in a Day Surgery Unit. However, to prevent overt contamination of the operating theatre a policy restricting movement of staff and the use of specific day unit footwear has been established at our institution.

The Day Surgery Unit consists of a reception/waiting area, ward, treatment rooms and operating theatre. On entering, all staff are required to remove their outdoor footwear and put on their day unit footwear. To minimize contamination of this designated footwear, staff are requested
Theatre over-shoes

Table I. Day unit footwear protocol

<table>
<thead>
<tr>
<th>Site</th>
<th>Footwear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Day Unit</td>
<td>Outdoor footwear only</td>
</tr>
<tr>
<td>Within Day Unit</td>
<td>Outdoor footwear – visitors and patients</td>
</tr>
<tr>
<td></td>
<td>Day Unit footwear – Day Unit staff</td>
</tr>
<tr>
<td>Day Unit theatre</td>
<td>Day Unit footwear only</td>
</tr>
</tbody>
</table>

not to wear it in other parts of the hospital. A notional barrier at the operating theatre entrance has been introduced beyond which only day unit footwear can be worn (see Table I). Consequently, all designated staff can move freely within the whole Day Surgery Unit and travel with the patient-flow in and out of the Day Unit theatre. Visiting surgical, anaesthetic, maintenance and support staff are required to put on their day unit footwear at the theatre entrance where their changing room is situated. This ensures that no outdoor footwear is worn within the theatre.

These recommendations result in the majority of the Day Unit being traversed by patients and visitors in outdoor footwear and by unit staff in their designated theatre footwear. Infection control standards are not compromised as overt contamination of the theatre floor is prevented, whilst the use of inappropriate, ineffective and expensive over-shoes is avoided.

Since its introduction, this protocol has proved acceptable to staff, patients and visitors. An initial problem with parents who accompany their children into the theatre and remain there until the child is anaesthetized was solved by providing a small stock of dedicated Day Unit footwear at the theatre entrance.

References